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THE GENESEE FARMER.

SATURDAY, DECEMBER 10, 1836.

Size of Farms.

We made some remarks a few months since relative to the proper size of farms, endeavoring to show that the greatest profit is derived from farms of considerable size, or where a division of labor could be adopted. It is our object at this time to show that farmers generally, by cultivating too much land, actually lessen their profits by losing the advantages of a division of labor; while, if they should cultivate a smaller quantity in a proper manner, they would in reality arrive at those advantages much more readily.

To make money by farming requires, *first*, as great an amount of product from crops as possible; *secondly*, that this be produced by as little expense or labor as possible; and *thirdly*, that as little capital as possible be invested. To arrive at all of these points together, it is necessary to raise large crops, to effect a division of labor, and use labor-saving implements and machines, and to till no more land than can be done to the best advantage. That this is to be affected by a course different from that generally pursued, only requires an exhibition of facts to prove.

It will perhaps be generally admitted, that much larger crops than are usually raised, *may* be obtained by taking the necessary pains. If the expense of raising the same quantity on a small piece of ground is no greater than raising it on a larger piece, the former would of course be the more profitable, for it would require less capital in land; but if it is in reality found to be less expensive, then it becomes doubly profitable. The question arises, what are the relative expenses and profits of the two methods, and if the practice of raising large crops is found to be most profitable, what is the amount of produce which we may reasonably expect from a given quantity of land. The best way to determine these points is to look at what has already been done, to examine the experiments which have been made in this kind of farming.

Numerous trials have proved, that at least one hundred bushels of corn may be expected from an acre with proper culture; Earl Stimson's crop averaged this quantity for ten successive years; and much larger crops have often been obtained. By the experiments of Gen. Barnum, he is confidently of opinion, that by the method he employed in cultivating the potatoe, from 800 to 1200 bushels to the acre may be reasonably expected. Satisfactory evidence exists that five tons of hay per acre have been obtained; and no less than three tons should be calculated upon when a proper system of farming is adopted. Repeated experiments with ruta baga have shown that with good culture from 500 to 800 bushels may be obtained with certainty; and from the statements of others, as well as from our own observationss, we are convinced that from 1200 to 1500 bushels of mangel wurtzel may be produced with equal certainty. Now, if corn is worth seventy-five cents per bushel, potatoes twenty-five cents, hay eight dollars a ton, ruta baga twelve and a half cents a bushel for feeding stock, and two and a half tons of mangel wurtzel worth on an average one ton of hay, as has been found by experiment; then the product of *twenty* acres may be considered as follows:

5 acres of corn, 500 bushels,	$375 00
8 acres of hay, 24 tons,	192 00
1 acres of potaoes, 1000 bushels,	250 00
3 acres of ruta baga, 1800 bushels,	225 00
3 acres of mangel wurtzel, 4000 bushels, 40 bushels to a ton, 100 tons,	320 00
	$1362 00

The expenses of cultivating the land and securing the crops, judging from the experiments above alluded to, would be about as follows:

5 acres of corn, 20 dollars per acre,	$100 00
1 acre of potatoes,	50 00
3 acres of ruta baga, $20 per acre,	60 00
3 acres of mangel wurtzel, do.	60 00
8 acres of hay, cut and cured according to the best mode we have seen, and described heretofore in this paper,	16 00
	$286 00

Add to this the interest on the land, supposing the original price to have been 50 dollars an acre, and that 30 dollars an acre have been expended in draining, manuring, and bringing it to its present fertile state, making 80 dollars an acre, the interest on which would be five dollars and sixty cents, or one hundred and twelve dollars, the sum will be 398 dollars total expenses; deduct this from 1362, and the remainder is 964 dollars nett profit from twenty acres of land.

It is to be observed that we have by no means taken the largest crops as a guide to this calculation, but have endeavored to obtain a medium of what may be reasonably expected, and in some cases have put the amount even below this. And it is to be observed that nearly one half is occupied with meadow, which yields only 176 dollars nett profit. It will not need much penetration to perceive that the profits by this mode of farming are many times greater than by the common method.

If farmers would adopt the plan of raising as large crops as possible, which could be best effected by combining, properly, draining, liming and manuring, and ploughing in your crops, and by never omitting a judicious system of rotation, we are confident that profits as great, on an average, as the above, and in some instances much larger, may be obtained, where as good a soil is to be had as is found in a large part of western New York.

Now although, as before stated, large farms have decidedadvantages over small ones, yet it will be perceived that all the advantages of extensive farming may be derived from those of moderate size, in a far greater degree than is usually done from farms of five times their extent.

Beet Sugar.

A kind friend at Palmyra has sent us *Pedder's Report on Beet Sugar*, after we had endeavored in vain for more than two months to procure a copy; but as the circumstances relative to this Report and its objects, have long been before the public, our remarks at this late hour will be brief.

We feel a deep interest in the subject; but we do not believe that great wealth will be suddenly amassed by those who engage in the manufacture of Beet Sugar. We are even apprehensive that expectations too highly raised, may be followed by a corresponding depression; and that this business which with *prudence* and *experience*, would yield a fair compensation, may be abandoned and brought into discredit by those who are in haste to become rich.

Whether the climate of the Middle States, is as favorable to the Sugar Beet as the *north* of France, may be a question. We have lately been told, though we know not on what authority, that the Beet in the *south* of France, yields but little if any sugar. But be this as it may, the Report would seem to favor such a conclusion,—for it appears that a much greater proportion of saccharine matter is obtained in Siberia than in the north of France. From these premises a fair inference would be that the Genesee Country is better adapted to the Sugar Beet than the neighborhood of Philadelphia; and that the climate of Vermont and Lower Canada is more genial than our own.

Some attempts have been lately made in this country, to extract Sugar from the Beet without success, but after reading the Report we have not been surprised at the result. In one case at least, the common Beet was employed. Much depends on the sort however; and even the "*Yellow* Sugar Beet" which we have grown in years past for the table on account of its sweetness, is rejected in all the large establishments in France. The *rose colored*, and the *white* Silesian, are the kinds cultivated.

The *maturity* of the Beet is anothor important requisite; and there are other points on which an inexperienced manufacturer would be likely to err. It appears from the Report that when the root is reduced to a pulp, no time should be lost in submitting it to the press, as fermentation commences almost instantaneously. To check this, lime is prepared so as to be of the consistence of cream, and then most intimately mixed with the juice. Animal carbon is also employed during both the evaporating and clarifying processes.

A report, necessarily prepared in so much haste as the one now before us, is entitled to

some indulgence from critics; and the great merit and valuable services of the writer may constitute an additional claim. It is proper, however, to notice such a literary aberration as "deffication" instead of *defecation*. "Saccharine" employed as a technical word, and corresponding with piperine, morphine, &c., may perhaps be allowed to pass; but "an incline" sounds *flat* to English ears. Some of the descriptions are also very incomplete. For instance, the machine for rasping, at page 13; and the "conical heaps" of beet roots, arranged in trenches ten feet wide and one hundred feet in length, at page 12. We cannot be persuaded that the writer meant to be enigmatical.

Indian Bread.

We recently partook of some most excellent Indian corn bread baked in large loaves, and the following method of making it was given.

After the meal is prepared, pour some boiling water on it till it is wet. Put in six steamed sweet apples to a loaf, a little yeast, milk, and enough cornell or middlings to render it capable of being kneaded. Let it rise, and then bake it three hours at least.

Wheat turning into Chess.

The excellent letter which follows, is copied from the Cultivator; and was written in reply to the same editorial article in that paper which elicited the remarks at page 361 of our current volume. It is the best thing that we have seen on the subject. The notion that wheat may approach so near to dissolution as to lose its identity and turn into another plant, reminds us of a Scottish legend, in which a wounded warrior swooned and was turned into a fairy!

JUDGE BUEL.—In the Cultivator for the present month, I have read an editorial on the subject of chess, which leans to the doctrine of the mutability of wheat. As all controversy is deprecated, permit me to submit one or two facts in opposition to those adduced in the article in question.—Some eight or ten years ago, my farm became very much infested with this weed—which proceeded probably from negligence—insomuch that I was even unable to save grass seeds that were clear of it. I determined, if possible, to extirpate it; bought my grass seed in order to have that which was pure; and caused my seed wheat to be thoroughly cleansed of all foreign matter. I did not permit those in my employment to judge for me, as to when it was sufficiently cleansed.—I therefore went to work *knowingly*—and I had the pleasure of seeing the quantity of cheat diminish at every succeeding harvest. The consequence is, that for some years past, out of the annual product of about fifty acres, I have not perhaps reaped a peck of cheat. My facts, however, have reference to the last and present years, about which I will be more particular in my statement. It is well known that the two past winters have been very disastrous to the wheat crop. That of '34–'35 caused the destruction of probably three-fourths of the young plants, many of which, however, did not finally perish until the spring. Some of the plants, therefore, must necessarily have been "diseased;" but notwithstanding this and all other causes, proximate or remote, I was unable to find a single grain of cheat, when my crop was threshed out. Most of my neighbors' crops, on the contrary, abounded in it; and it was, as usual, regarded as degenerate wheat. In regard to the present year, the wheat had not only to contend against the effects of the winter, but it had to withstand the ravages of the Hessian fly, which was more numerous in the spring, than I have ever before known. When it was time for the ears to be developed, every person was surprised to see such a quantity of cheat; and some were amazed to behold their fields exhibit scarcely any thing else. Under these circumstances, and when a large number of the stools did not have strength enough to shoot, (being consequently grievously 'diseased') I was not able to find a *single plant* of cheat during a search over a considerable portion of my field. Now I venture to ask, why my own field, which was no better cultivated than those of my neighbors, and which also contained "springy places," should have been more exempt than theirs from this pest?

After my own experience, I cannot but believe that those who detail facts to prove the transmutation of wheat, state them with much looseness. Do they *know* that the seed was pure, and that there was no filth in the ground when it was prepared? Unless their premises are cautiously laid, their deductions are entitled to no consideration, even from themselves. From what I know of those whom I am acquainted with, and judging of others by them, I am certain they are not cognizant of all the circumstances, on which this result should be made to depend. Every fact detailed in the Cultivator is of this character, with one or two exceptions—the most important of which is, that G. W. Featherstonhaugh was in possession of a plant of cheat, "with the skin of a kernel of wheat so attached to the roots, as to satisfy him and others, and amongst others, the late President Madison, who examined it, that in this particular instance, a kernel of wheat had produced a plant bearing heads of cheat." Now is it not matter of astonishment, that there should have been only a single instance of the kind ever brought to light, when if the doctrine be true, millions of similar changes occur every year? As only one case, however, has been produced, the conviction is irresistible, that the grain of wheat was not the parent, but that its own offspring might very probably have perished–for "disease" oftentimes terminates in death also–after the roots of the two plants had become interwoven. Even they who believed in transmutation, should not rely upon a solitary case, and that too of such a questionable character, to unsettle a fundamental law of nature; but should be even ready and willing to produce others without number. But I maintain that it was impossible, in this instance, to establish the remains of the kernel to have been those of a grain of wheat. The examination must have been made at least five months after the act of germination—for the cheat had produced heads—and in such a state of decay, the resemblance could have been little better than fanciful. During the past spring, and in particular reference to this "fact," I made several careful searches, but could never discover the vestige of a kernel, in so advanced a stage of the growth.

It is certainly with no design to draw the Editor into controversy, that I respectfully submit, whether he who occupies so exalted a station in the agricultural community, and to whom we habitually look for correct information, should not feel himself bound to investigate and to explain how this important change takes place? Did he ever see a plant which he knew to be wheat when it vegetated, and cheat when it matured? He is a botanist, and could at all times readily distinguish between them. Ought he to remain satisfied because 'practical farmers,' and some of them 'philosophers' too, consider wheat to be mutable? Philosophy has believed in other things apparently as absurd, and has itself exhibited many strange mutations. If cheat be the product of diseased wheat, by what rational process is it that a feeble individual can be transformed into one of vigorous constitution? Every body knows that cheat will thrive well in all situations, under the most slovenly culture, and even under the pressure of the hoof. In the ordinary operations of nature, the offspring inherits no more vital energy than the parent was endowed with; but according to this doctrine, we must believe in a resurrection—not of the living from the dead—but one palpable and corporeal, in which health and vigor are derived from weakness and disease. It is, moreover, incumbent on those who contend for such a radical change in one department of nature, to show that a like transformation takes place in respect to other productions, animal as well as vegetable.

In conclusion, I would suggest to the advocates of transmutation, that as the *onus probandi* rests upon them, they should take the pains—if that would not be out of their element—to select a number of *young* plants of wheat, with the kernel attached to the roots, re-set them in a place of security, and subject them to such treatment as may promote the attainment of their object. Let them make a candid statement of the result, and their "facts" will be entitled to respect and consideration. T. S. P.

Goochland County, Virginia.

Corporate Associations.

We have observed notices of intended applications to the New Jersey legislature, and we presume the like will happen in New York and other states, for charters for *cultivating the beet*, and manufacturing sugar, *with banking and trust powers: for planting mulberry trees* and fabricating silk, and indeed for almost every purpose that comes within the scope of our national industry.

At no period of our history, and we believe at no period of the world, has the mania for stock companies been so rife, and we may add so alarming, as at the present day. Hardly a new branch of industry can be mentioned, however adapted to individual means and enterprise, which is not immediately monopolized by mammoth chartered associations. We say *monopolized*—for when these associations come in competition with individual effort, the weaker party must either be crushed, or become humiliatingly subservient to the stronger power. Nor does the disparity exist alone in the amount of wealth, and the weight of influence,—the stronger party has a further advantage in its *chartered* privileges, which are not only withheld from the individual, but which absolutely abstract from his natural rights;—as for instance, the individual is amenable to the laws for his honest debts, *to the extent of his entire means;* while the chartered associations *are not* amenable for company debts *beyond their actual investments*, although its members may be worth millions. It is a question worthy of high public consideration, whether a charter should be granted for any object, which an individual, or common partnership, are competent and willing to undertake—and whether they should be granted in any case, where the *public* good does not indisputably demand them. Mankind are disposed to live rather by their wits than by their labor; and when government proffers ready facilities for speculation in stocks, without a manifest counterbalancing public benefit, it feeds some of the worst human passions, and impairs that equality of rights which ever ought to be preserved among the citizens of a free state.

But the multiplication of chartered companies, for trivial or doubtful objects, has an irresistible tendency to unsettle and derange the good order of society—to bring honest industry into discredit, and to foster a spirit of deceptive desperate speculation, which proves the ruin of thousands. Our situation, for the last twenty years, has enabled us to observe the movements, and to scan the motives, which have led to the rapid multiplication of chartered associations among us; and we honestly avow it as our belief, that the motives have been generally those of speculation, with little or no regard or tendency to the public good; and that the means resorted to, to obtain charters, have generally been disingenuous, often dishonest, and sometimes infamous. We admit that the public interests have been generally promoted by charters for objects of magnitude, requiring great capital. But because *some* are beneficial, it does not follow that *all* are so. Because it requires a concentration of capital, and corporate privileges, to dig a canal, or construct a rail-road, neither of which come in competition with individual enterprise, it does not follow that the like capital and privileges are required to plant the mulberry, or cultivate the beet, which every farmer and gardener can do without corporate powers.

The subject addresses itself to the good sense and dispassionate consideration of every friend to good order and wholesome laws. The evil can only be arrested by the mandate of the public will.—*Cultivator.*

Yankee Ingenuity.

The whole world must, ere long, acknowledge the superiority of Yankee ingenuity, and already many portions of it have tacitly made the admission, by the employment of American mechanics in the superintendence of various kinds of mechanical business. Gen. Tallmadge, in a letter from St. Petersburgh, remarks that the foreman of the principal machine factory at Manchester, (Eng.) is an American, from Providence; and the principal manufacturer employed by the King of Prussia, is a native of Baltimore. Henry Eckford was for a long time the master ship-builder for the Sultan of Turkey; and we saw stated a few days since, that several elegant buggies have been exported, per order, to England from Newark, N. J. Two inventions which are considered by the English as the greatest improvements of the age, are the fruits of Yankee ingenuity—the machine for making the weaver's reed, invented by J. A. Wilkinson, of R. I., and the "self-regulator" to the power-loom, invented by A. Stone, of the same state. But in point of ingenuity, we believe nothing can exceed the stock machine invented by Gen. Harvey, of this village, and now in successful operation in the manufacture of stock frames. Added to this, his machine to manufacture screws; his coining apparatus, and various others of minor importance, exhibit mechanical skill of the highest order. Wherever our ingenuity and enterprize extend into foreign countries, an evidence and conviction of our greatness goes with them; and the non-recoiling rifle of young Cochran, made Mahmoud of Turkey exclaim, "If American *boys* can do this, what cannot their *men* do!"—*Poughkeepsie Telegraph.*

From the Farmer and Gardener.

Time for Sowing Wheat.

I have noticed of late that several writers have advanced the opinion that *wheat*, if sown *late*, will stand a better chance to avoid the ravages of the *fly* than if it be sown *early*. One of these writers intimate that between the 1st and 10th of November is about the proper time. I have sowed my wheat late and early, and although I have no *data* to refer to, the impression is very strong upon my mind, that the former was more generally exempt from this insect. Upon one occasion, I think it was in 1831, I did not get my last field of wheat in until the 2d of December, and that my neighbors all prognosticated, kind souls, that the grain would rot in the ground and never come up. It did come up, though not until the next spring, generally, and it was observed on all hands that it was the best field of wheat on my farm, although the rest (three in number) had been manured and ploughed just as well as this was. The field consisted of twenty acres, and yielded 426 bushels of good merchantable wheat. It was of the red bearded variety. The field had been the two preceding years in clover, and prior to ploughing it in I put on 500 bushels of shell lime,* 25 bushels to the acre. In turning down the sod, I was very careful, employing a hand to follow the ploughman and turn all that did not lay flat with the sod completely under. I made the ploughman plough deep, say from 7 to 8 inches—the surface being harrowed, furrowwise, I spread over the whole field about 1,000 bushels of ashes, and 200 single horse cart loads of well rotted manure, mixed with about one-third its quantity of vegetable mold from the woods—then sowed my seed, and instead of harrowing it in, passed the cultivator over it. In this state it remained until the frost was out of the ground in the ensuing spring, when to prevent the ill effects of frost-spewing, I passed the *roller* over it.

* This would seem to justify the high estimate which Professor Ducatel sets on shell-lime.

I have intimated that I gave this field a liming at that time, 1831, of 25 bushels to the acre, and I can now add, to this day its benefits are as obvious as the noon-day sun, and I doubt not that it is more productive than it was when first cleared; how long it may remain so, is to be tested by time; but by following up the good system of rotation of crops, and ploughing in a green crop of clover, rye, oats, or buckwheat occasionally, I think it will last for at least ten years in good heart.

My neighbors lime much heavier than I do, some four-fold, others six-fold, but I doubt the *necessity*, and if by putting on 25 bushels to the acre we can secure as great a benefit for a reasonable number of years as when we put on a much larger quantity, why should we incur the additional expense? A PENNSYLVANIA FARMER.

Pea-Nut Cocoons from Italy.

We have seen some cocoons of a superior quality raised in Northampton the present year, being the product of Italian eggs, 240 of which weighed one pound—one peck of which were reeled at the Northampton Silk factory, and produced *seven ounces* of superior fiber and most brilliant luster, being at the rate of 1 3-4 pounds of silk to the bushel. The cocoons were long, firm, and in the shape of a *Pea-nut*, having a depression or stricture midway of the length of the cocoon. They were small firm and heavy, the thread of *unusual length*, so much so that the reeler almost despaired of finding an end.

We have the impression that the worms were fed on the Canton mulberry. We understand the demand for, and sales of mulberry trees and cuttings this fall is unprecedented. We approve of the removal of the trees to the place of destination, before winter, that they may be ready for setting next spring, and avoid exposure to the spring frosts and drying winds. Trees and settings should be set *immediately* after being removed from the winter deposit.

The present prospect is, that the silk growing business will be prosecuted with more energy the next, than in any preceding year, an impulse has been given that cannot be easily checked or paralised. It is hoped that the *few* individuals who have thoroughly investigated and tested the mulberry culture, will not relax their exertions to acquire and communicate practical and useful information on the subject of silk culture, but that they will persevere until a *mulberry patch* shall be planted, and found as common about every mansion in the country village and cabin of the forest, as is the current bush in our gardens.

It has been proved by actual experiment, that worms may be fed on the foliage of the Chinese mulberry the same year the plants or cuttings are set out, with evident benefit to the plant, producing more foliage, and may be plucked the same season, always leaving the leading shoots untouched until the *last collection* of the foliage, and then take off the leading shoots to facilitate and promote the formation of wood.—*Northampton Cour.*

Royal Agricultural Society of France.

A letter from a correspondent at Paris, gives the following account of this distinguished institution:

"This society publishes yearly one or two volumes of memoirs. The number of corresponding French members is 400; there are from two to four or five in each department of France. The number of *associes ordinaire* (common associates,) who regularly assemble every fortnight, is limited to forty; that of *associes libres* to ten; that of *associes etrangers*, (foreign members,) to twenty—to which latter you belong. The king is the protector of the society. The president and vice-president are chosen annually; the secretary is perpetual. The members of the government consult this society on every great question relating to agriculture, and previous to its discussion by the chamber of deputies. The members who attend the meetings receive a card, which entitles them to a remuneration of five franks, (=to 94 cents,) for each sitting. *All the expenses of the society are defrayed by the government.* Prizes are adjudged annually. After their distribution, the members dine together.

"Agriculture is now making great progress in France, by the influence of the corresponding societies of the Royal and Central Agricultural Society, which assemble in the Hotel da Ville of this city."—*Cult.*

Beet Sugar.

Pennsylvania takes the lead in introducing the sugar beet, and agents are now in France from that state procuring seed and collecting information. A gentleman who has been conversant with the rise and progress of this production in Europe, says that as to climate, a northern latitude is found to suit this plant best. The north of Germany, Prussia and Siberia, the places where this new application of it was first made, are more favorable to it than the northern department of France, as experiment has amply established, and the trial of it in the south of France has constantly failed, though it was at first supposed that this root would, as well as other productions, contain a larger proportion of saccharine principle than those of older countries. This hypothesis is founded on a mistaken analogy supposed to exist between plants growing above and below the soil, proved, as might have been expected, completely fallacious, and the culture is now given up.—*Newburyport Herald.*

To Cure the Bots.

The following is the best recipe I have ever seen tried for the *bots* or *grubs*. I think it was once published in either the American Farmer or Turf Register.

Drench with a pint of sweet milk and a pint of molasses; if no relief in 30 minutes, repeat the dose two hours after with a quart of strong salt and water—two hours after with a pint of linseed oil.

The grubs fill themselves with molasses, their skins then become thin, the salt and water cuts them to pieces, and the oil carries them off, and heals the wound inflicted by the grubs. For common cholic, bleeding in the mouth, and a purge of salt and water.

From two to three ounces of tincture of assafœtida, diluted with a pint and a half of water, will nine times out of ten produce instant relief. —*Southern paper.*

A cargo of some eight or ten thousand bushels of wheat has arrived in Georgetown, D. C. from Rotterdam. It costs, we understand, delivered in Georgetown, *one dollar twenty-six cents!* At that rate, flour could be furnished at eight dollars, or a little less, per barrel. The profit on the importation must have been immense. Wheat could be brought from the Mediterranean at a lower rate.—*U. S. Telegraph.*

The N. Y. Commercial Advertiser of the 19th inst. says, that within the three preceding days 20,500 bushels of German wheat had been sold at from $2 to $2,05 per bushel. Such supplies from abroad will come in very seasonably to meet the deficiencies of our own short crop.

Painting on Glass.

It is stated that M. Stalars, a young artist at Lille, in France, has discovered in some ancient manuscripts, directions for painting on glass, which reveal the secret of this art as practised in ancient times, and so long lost. He has tried the method, with results which it is said are highly satisfactory.

Cure of Lock Jaw.

Among the horses exhibited at the West Suffolk agricultural show, was a fine cart mare, the property of Colonel Rushbrook, which was some time since seized with locked jaw, and was perfectly cured by pouring cold water along the back from a watering pot, without intermission, for a considerable time; the application being recommended by an eminent London veterinarian.—This affection has been generally considered incurable.—*English Paper.*

COMMUNICATIONS.

Chess—March of Mind.

BY ANTI-CHESS.

From time immemorial there have been men, farmers, and respectable farmers too, who have believed in the transmutation of wheat into chess or cheat, an error to be ranked with a belief in the influence of the moon, which has existed for at least as long a period, but which is in a fair way to vanish before the light of science and observation. Absurd as this notion respecting the change of wheat into chess must be deemed by every person acquainted with the order of nature, it seems there is a lower deep of absurdity, and a Mr. Smith, of Warren county, Ohio, in a late communication to the Cultivator, has, we think, found it. He has not only had whole fields of perfectly clean sowed barley turn to chess, but he has had oats turn to a mixture of rye and chess! He says—"Rye, barley, wheat and oats, as far as my observation extends, all produce cheat or chess, and that precisely alike in grain and stalk." "It proves to me that these grans, in all their varieties of summer and winter, bearded and unbearded, are originally from the same *parent stock*,—changed only by cultivation and change of climate." This is simplifying the process of creation in good earnest. All we wonder at is, that it has never been found out before that oats and barley were once wheat, or vice versa.

Mr. Smith is not however alone in the glory of this discovery. That celebrated Hebrew scholar, Professor Stuart of Andover, in controverting some of Professor Hitchcock's opinions on geology, thus reasons—"Reflect for a moment what difference in the same vegetable or animal is made by transfer to another climate, air, soil, and other kinds of nutriment. All the varities of the rose seem to have sprung from the simple wild briar, or rose; our potatoes from an insignificant and unhealthy wild plant; our wheat and rye from wild grain of seemingly no worth; our unnumbered varieties of delicious pears, apples, peaches, and plumbs, from wild and insipid fruit. The whole kingdom of nature is perpetually undergoing variations in this way. There is no end of the species that one plant will make, by the aid of climate, air, soil, cultivation, &c."

Here, by a single dash of the pen, we have not only different *varieties* of the same plant produced by the causes enumerated, such as the numerous kinds of apples, potatoes, &c., but we have different *species* derived from our original stock, for example, plums from apples, peaches from cabbages, and potatoes from horse-radish, all effected by cultivation, climate, &c. If this be correct, as the Professor asserts, we see not why camels were not derived from horses, elephants from the giraffe, sheep from the buffalo, dogs from owls, man from the simian race, and the whole from some single originally created animal, and that one most probably the kangaroo.

To prove the erroneous nature of some opinions, it is only necessary to carry them out fully, and show the absurdities to which they inevitably lead; and if the doctrine that wheat turns to chess drags after it such ridiculous consequences as has been advocated by Mr. Smith, it goes far to prove it can have no foundation in truth, The subject of wheat's turning to chess has been ably and sufficiently discussed in the previous volumes of the Farmer, and the grand truth satisfactorily demonstrated, that if *clean pure wheat was sown on ground free from chess, there would be no chess in the crop.* Of all the writers in that controversy, none seem to have had a glimpse of the doctrine advanced by Mr. Smith, that chess would turn to rye or oats, and that all the grains were convertible into the other varieties; this grand discovery was reserved for, we suspect, a better informed man, and a more enlightened period. ANTI-CHESS.

Beet Sugar.

BY W. G.

There seems to be some little conflicting difference of opinion on the possibility of manufacturing beet sugar profitably by individuals or families, among those whose attention has been drawn to the subject, and who profess to speak from experiment. For instance, Mr. Sleigh, of Philadelphia, in a late communication to the U. S. Gazette of that city, says—"An establishment will not clear its expense, unless it be calculated to manufacture at least from two to five hundred pounds of sugar a day; so that the idea of individuals in this country manufacturing profitably for private consumption is preposterous; their sugar would stand them, including labor, a dollar a pound." This opinion Mr. Sleigh says he has come to "after numerous experiments."

On the other hand Mr. Le Ray de Chaumont, Mr. Iznard, and others intimately acquainted with the manufacture in France, assert that there can be no doubt of the practibility and profitableness of domestic or family manufacture, and that there are large quantities actually so manufactured in France. In addition to these statements, in the "Journal des Debats," of April 15, 1836, appears an article on this subject, in which it is stated, that four residents in the village of Wallers, department of the North, formed an association for making sugar, subscribing 50 francs each as capital. One was a blacksmith, the other farmers. These men were able to make from 40 to 50 pounds a day of sugar of a medium quality, a result surprising, considering their simple mode of conducting the process. They used curry combs to rasp the beet roots, used linen bags for expressing the juice, and the syrup thus obtained was boiled in pots on the blacksmith's fire. Several others are mentioned as having introduced the business on a small scale successfully, and the French editor intimates as his opinion, that the time is not distant when every family in that country will make their own sugar, as they now do their preserves.

That some experience in the manufacture of beet sugar by companies and capitalists in this country must be acquired, before it can be introduced into families can readily be conceived, but as the processes become simplified, and our farmers become familiarized with them, and with the culture of the beet, we can see no reason why it cannot be as well made in families here as in France; and there is no reason for doubt but that it will. If with cooking pots and a blacksmith's fire six or seven dolls. worth of sugar were produced; there can surely be no obstacles that American perseverance and an improved apparatus will find insuperable. W. G.

Apples for Swine.

MR. TUCKER—I am a plain farmer, but one who takes and reads your excellent paper; not because I expect to carry out in practice all the valuable principles contained in it, but because there are plain familiar hints in it, on almost every subject connected with farming, which render it suituable to my small means, while a desire for further improvement is constantly awakened. In looking over its pages, I am occasionally struck with a decided triumph gained over long established prejudices and erroneous practice, by the spirit of modern inquiry; one instance of which is shown in the substitution of apples for an entire course of grain in fattening hogs. Since I have tried the experiment myself, and seen it fairly tried by others, and know that hogs will grow and fatten on apples, I have often asked myself how it happened that a course of feeding so obvious, where apples were plenty, should not have been adopted centuries before.

The early part of my life was spent in the land of steady habits, and though there was scarcely a year in which we, in common with thousands of other farmers, had not more apples than we knew what to do with, and though pork has, ever since my remembrance, been a desideratum in that region, the idea of using apples for feeding pigs never seems to have been dreamed of. The story told of the farmer down east, who used raveled yarn for hoisting his swine when dressing them, I do not exactly credit, because I did not see it; but there is a man now living, who carried to market at a distance of more than 20 miles, at a single load, and in a common cart, 27 fattened hogs! This lot of hogs had been kept over the winter, at an expenditure of two or three hundred bushels of potatoes and corn—had run in pasture through the summer—and in the fall been fed in the then most approved manner. Their weight when dressed averaged about 130 lbs. each. Yet this man, who could send to market a load of skeletons, had thousands of bushels of apples in his extensive orchards, and during the fall, kept one or two cider-mills in operation, making cider for a distillery, while not an apple was allowed his pigs, and they were as carefully excluded from the orchard as if the fruit would have poisoned the whole herd.

There are some new things that I like, not because they are new, but because they have proved to be better than the old; and among these are cast iron ploughs—steel barn and dung forks—threshing machines—horse rakes—and fattening hogs on apples. PLOUGHPOINT.

Corn Stock Fodder.

It is observed by a writer in the Vermont Farmer, and correctly too, we think, that the stocks and shucks of an acre of good corn, well managed, will go as far in keeping neat cattle as the hay cut from the same acre of ground. What we mean by being well managed is, that the crop be cut on the ground, and immediately stooked, as soon as the grain is glazed—that the corn be picked off as soon as it is sufficiently dried, and the forage bound, and well stacked or housed,—and that when given out, it be cut and fed to the

stock in mangers. If, when fed, it can be steamed, or wet with a weak pickle, and sprinkled with a small matter of ship stuff or bran, all the better. The defects in managing this forage crop are, that either the corn is topped, and the tops left in the field in stooks, or the entire stocks are left to stand till they are nearly spoilt by the weather, —that they are badly housed, and fed in the yard without cutting. The consequence is, that much of their nutricious matter is dissipated —that much is often destroyed, and that of what remains eatable, the cattle are only able to consume the leaves, tops and shucks—the main stock being lost, for want of being cut, so that the cattle can masticate it. Our cows and oxen were kept last winter almost wholly upon cut corn stocks, and they were in as good condition in spring as when fed entirdly on hay.—*Cult.*

New Horticultural Work.

G. C. Thorburn has just published, in pamphlet form, "*An Outline of the First Principles of Horticulture*, by JOHN LINDLEY, F. R. S., &c., Professor of Botany in the University of London, and Assistant Secretary of the Horticultural Society,"—price twenty-five cents—sold also by W. Thorburn, Albany. We know of no individual better qualified to explain the phenomena of vegetable life, and to separate that part of vegetable physiology which relates to the science of cultivation, from what appertains to pure botany, or to other subjects, than Professor Lindley. Connected as he has been for many years with the Horticultural Garden of London, and filling with distinguished honor the professor's chair of botany in one of the first universities in the world, his opportunities of studying the science of botany have been great. "My intention," says he, "has not been to write a work on the philosophy of horticulture; but simply to point out, in the briefest manner, what the fundamental principles of that philosophy have been ascertained to be." "In the first place," he continues, "a distinction must be drawn between the *art* and the *science* of horticulture; the former teaches the manner, and the latter the reasons of cultivation; and it is to the latter only that these propositions apply. Secondly, the plan of this sketch excludes every thing that is merely speculative, or that is incapable of being reduced within certain fixed principles." As agriculture and horticulture are sister arts, and are governed by the same general laws, this little work will be alike serviceable to the farmer, the gardener, and the florist, to all of whom we heartily commend it. We think of publishing the entire treatise in the next volume of the Cultivator, but in the mean time we make an extract, to afford the reader a sample of the work. The figures introduced in parenthesis refer to the paragraphs in which the terms preceding the figures are explained.

"X. SAP.

"260. The fluid matter which is absorbed, either from the earth or from the air, is called sap.

"261. When it first enters a plant it consists of water, holding certain principles, especially carbonic acid, in solution.

"262. These principles chiefly consist of animal or vegetable matter, in a state of decomposition, and are energetic in proportion to their solubility, or tendency to form carbonic acid, by combining with the oxygen of the air.

"263. Sap soon after acquires the nature of mucilage or sugar, and subsequently becomes still further altered by the admixture of such soluble matter as it receives in passing in its route through the alburnum, or newly formed woody tissue, (65)

"264. And when it reaches the vicinity of the leaves it is attracted into them, and there, having been exposed to light and air, is converted into the secretions peculiar to the species.

"265. It finally, in its altered state, sinks down the bark, whence it is given off laterally, by medullary rays, and is distributed through the system.

"266. No solid matter whatever can be taken up by the roots; for this reason metals, which in a state of oxydes are poisonous, are perfectly harmless in their metallic state, as mercury; and this is, no doubt, the cause why liquid manure, which contains all the soluble parts of manure in a fluid state, acts with so much more energy than stimulating substances in a solid state.

"267. The cause of the motion of the sap is the attraction of the leaf-buds and the leaves.

"268. The leaf-buds, called into growth by the combined action of the increased temperature of the light of spring, decompose their carbonic acid, (279) and attract fluid from the tissue immediately below them; the space so caused is filled up by fluid again attracted from below, and thus a motion gradually takes place in the sap from one extremity to the other.

"269. Consequently the motion of the sap takes place first in the branches, and last in the roots.

"270. For this reason a branch of a plant, subjected to a high temperature in winter, will grow, while its stem is exposed to a very low temperature.

"271. But growth under such circumstances will not long be maintained, unless the roots are secured from the reach of frost; for, if frozen, they cannot act, and will, consequently, be unable to replace the sap of which the stem is emptied by the attraction of the buds converted into branches, and by the perspiration of the leaves. (XII.)

"272. Whatever tends to inspissate the sap, such as dry and heated atmosphere, or an interruption of its rapid flow, or a great decomposition of carbonic acid, by full exposure to light, has the property of causing excessive vigor to be diminished, and flower buds to be produced.

"273. While, on the other hand, whatever tends to dilute the sap, such as a damp atmosphere, a free and uninterrupted circulation, or a great accumulation of oxygen, in consequence of the imperfect decomposition of carbonic acid, has the property of causing excessive rapid growth, and an exclusive production of leaf-buds.

"274. Inspissated or accumulated sap is, therefore, a great cause of fertility.

"275. And thin fluid, not being elaborated, is a great cause of sterility.

"276. The conversion of sap into different kinds of secretion is effected by the combined action of *air*, (XI.) *light*, (XI.) and *temperature*." —*Cultivator.*

Improved Silk Machine.

We are gratified to learn that the writer of the following letter has succeded in perfecting his machine for the manufacture of tram, organzine, and sewing silk. During a short visit he made us last summer, he described the machine he had invented and used, and the improvements of which it was susceptible, and left no doubt on our mind of its being a valuable invention, both for the silk grower and manufacturer. Not having seen it, however, we cannot speak of its merits with that confidence which we might after a careful examination, but judging from the inclosed specimen of sewing silk, and the well known inventive genius of Mr. Botsford, we do not hesitate to recommend to our silk friends to give it a trial. We hope the several County Societies will furnish themselves with one of these machines as soon as they can be procured; for if it proves to be a valuable invention, they can afford Mr. B. much aid in introducing it into general use—a duty which we shall all owe him, and we trust be ready to discharge.

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ROXBURY, Ct. Oct. 15, 1836.

MR. COMSTOCK—Sir: Since I saw you I have made considerable improvement in my machinery for manufacturing silk. It now takes it from the cocoon and prepares it for the loom, or converts it into sewing in the neatest possible manner. As a proof, I inclose you one skein with this communication for your inspection. My patent right I expect is secure, and I shall be able to supply orders for the machinery next season. Its great superiority over all other machinery known to me, consists in this: it places the silk from the cocoon directly on the spool, and from the spool is converted into sewings or prepared for the loom with great perfection, facility and dispatch. It will come out under the name of the Silk Reeling, Doubling and Spinning Machine. In regard to its being simple and important to silk growers, I will pledge myself to take any person of common ingenuity, and instruct him in one day so that with the directions for using the machine, and a little of his own experience, he will be able, in a short time, to make sewing that shall equal the best Italian.

Another important qualification is—it prevents all waste. I presume that one hundred persons employed in a factory would not waste one pound in as many weeks. It is calculated for any number of spindles, from the small hand machine of six to the most extensive manufacturing establishment. ISAAC G. BOTSFORD.

—*Silk Cult.*]

Potash and Ashes as a Manure.

MR. EDITOR—In the Farmer of 1835, you spoke of the use of potash as being less expensive than ashes as a manure, without mentioning the quantity of water, or how it is to be distributed, nor if it would be better in the autumn or spring. You will oblige those who are ignorant by any particulars you can give.

BY THE EDITOR.—The article alluded to was taken from the New York Farmer, and contains the following particulars, which we wish had been somewhat more definite:

"I had a lot of meadow land containing about three acres, which had been reduced to poverty by severe cropping. On this piece of ground I made the following experiment: Having broken up the sward, and harrowed it repeatedly until quite mellow, I spread leached ashes over one acre, and potash dissolved in water on two other acres; sowed millet seed, clover and timothy, all mixed together in the proportion of one part of each of the latter to five of the former, and one bushel of the mixture to an acre; harrowed all in together, on or about the first of the sixth month.

"The ashes cost fifteen dollars, the potash five dollars the acre; the expense and trouble of dressing with potash about in the same proportion. And now it was a matter of no small interest to me, a novice in farming, to observe the result of the experiment, which when made I supposed to be entirely original. The crop of millet was fine, and as nearly alike as could have been expected, if the land had all been covered with the same kind of manure. The clover, also, all over the lot, was luxuriant, and gave the strongest evidence, to my mind, that potash is the principal agent in leached ashes, which causes the fertility. I made trial of potash in a lot of four acres, which was considered the poorest on my farm, on which I sowed millet with the potash. I sowed at the same time four other acres without any manure, on ground considered much better than the last above mentioned.

"I cut double the quantity of hay from that dressed with potash, and of a better quality. Thus far my little experience goes in favor of potash as manure; but I much desire that some of thy subscribers, of longer experience, and abler pen, would favor us with light on this interesting subject. D. T."

We would unite with the writer of the foregoing, in soliciting farther experiments on the topic, and are the more desirous that such trials should be made, as we do not find in our agricultural books any mention of potash as a manure.—*N. E. Farmer.*

Calico Potatoes.

We have now in our office a basket of the calico potatoes, which look and cook well, and are said to yield as well as almost any kind whatever, (except the long reds, which are fit only for cattle and hogs.) These calicoes were presented us by Holmes Tillson, Esq., of Sidney, and were cultivated by him from seed brought from Nova Scotia. They come to maturity very quick, being ripe in July, in warm seasons—are *large*, (which is a great object in digging, if not other-

wise.) They have some resemblance to the Chenangoes, but are larger, eyes more deeply indented, and have less of the blue and purple in their color. It seems to us that this variety of potatoes will be an acquisition, and we think it would be well for those farmers who can get the seed, to plant a few hills, by way of experiment.—*Kennebeck Journal.*

On Potatoes.

The potato will grow upon almost any kind of soil, provided it be not too wet and clayey; but light, dry, and friable loams, or sands of tolerable consistence, are the most appropriate. Reclaimed bogs and peat land, when well drained, produce large crops; and some of the finest qualites are grown on alluvial soils, and in the warped land in the neighborhood of the Humber. Grubbed wood-land is also favorable to its growth, and the planting of potatoes will probably be found the most profitable mode of bringing it into immediate cultivation; indeed, as much as 560 bushels per acre have been thus obtained, but the land was manured with twenty wagon-loads of dung A sward, or first ley, is, however, the most desirable; and it is for this purpose the common mode of breaking up of grass-land in Ireland, where it is frequently let to the peasantry at extravagant rents, in what are there termed 'Con-acres,' and yields crops of superior quality. The climate, indeed, is there more genial to the growth of esculents than that of England, and the soil is generally so much richer, that in no other country has the culture of the potato been carried to such perfection.

The produce of four eyes cut from the cluster species, and planted in four different kinds of soil, was—

On a strong rich loam,	34 lbs.
—— light rich loam,	29 "
—— good gravel,	19 "
—— sandy soil,	15 "

But, although some idea may be thus formed of the probable produce, yet no definitive conclusion can be drawn from this experiment, regarding the crops to be obtained from the land, for other sorts might have been better adapted to the soils; they must be all heavily manured, and good sands are especially favorable to the growth of the larger roots.

CULTURE.

In Yorkshire, and other parts of the north, the ground is ploughed into one-bout ridges, and the "sets," or cuttings from the potatoes to be planted, are placed in heaps or baskets, and laid by women and children in the furrows; the manure is laid at the same time, and the ridge is covered with earth by the plough dividing it, and making a fresh one over the potatoes. As soon as the plants make their appearance above ground, the ridges are harrowed down, and are suffered to remain in that state about a week, when the weeds will again begin to appear; the ridges are then earthed up, and in a week or two, as much of the earth from the sides of them is ploughed down as can be done without leaving the roots too bare. After this, the tops of the ridges are carefully hand-hoed, and the earth which was ploughed *from* the ridges, is again turned *to them*: if afterwards weeds grow up, they are again hand-hoed, after which the earth is again drawn up to the top of the ridges. The plants having by this time got to a considerable size, soon overcome all weeds, and consequently require no further attention till the time of taking up. It has however, been justly observed, that "On all very dry sands, and in a dry climate, the land should be laid quite flat, and the plants should be hoed by hand, as the only means of preserving the ground sufficiently moist to promote the growth of the crop; but in every situation where there is no danger of the land being too dry, and on all thin soils, one-bout ridges have the advantage over every other method."

Another mode—which it seems has been borrowed from America—is to *plant the sets in banks.* "The field is marked out in shallow drills, at about two feet and a half distanee, by the double mouldboard plough, and is then marked out transversely at the same distance; thus intersecting the surface at right angles, and the dung is laid at the time of planting. The holes for the reception of the sets, are formed by a laborer at the intersections marked by the plough, in such a manner as to leave them flat at the bottom, about ten or twelve inches diameter, and three or four inches deep. This being done, the manure is divided into the holes as evenly as possible, taking care that the particles be well separated by women and children breaking it with their hands. Four cuts are then to be laid in each hole, within four inches of the edge, and about six or seven inches distance, and covered by levelling the soil into the holes with shovels, which finishes the work until the plants appear above ground; after which only a small quantity of earth is thrown lightly on the banks, just sufficient to refresh the surface, and if the land be foul with weeds, it should be hand-hoed before the banks are dressed. The last earthing should not be performed until the crop is in full blossom, when it must get another light dressing."

Mr. Burroughs, from whom we have extracted the above account, says, that "many who have heard of this culture, but who have not practised it, imagine that its chief object is to afford a great quantity of earth being thrown up to the plants; but so far from this being the scientific principle of the system, that should the sets be deposited too deep, or the banks be landed too high, the crop would prove very unproductive." He adds also, from his own experience, that "the banks being left quite flat at the top when finished, the crop proved much more productive than the adjoining drills, sown with an equal quantity of manure, and the potatoes were of better quality."

Regarding the *mode of spreading the dung*—whether above or under the sets—some difference of opinion prevails; for although the latter is the method usually adopted, and it may be rationally supposed that, as the roots shoot rather laterally than upwards, it is from the manure placed underneath that they extract their nutriment, yet it is supposed by many persons that, if the land be light and dry, it answers better to lay the manure in furrows above the plants; and some farmers seem to think the manner of its application immaterial. According to an experiment made with the utmost degree of attention, under the direction of the Board of Agriculture, the former, however, appeared to have the advantage of five to four in its favor: the produce of an equal weight of sets, and quantity of manure, being—when laid

over the dung,	105 lbs. 4 oz.
Under the dung,	84 " 3 "

Such are the ordinary modes of culture usually adopted throughout most parts of the United Kingdom; but a novel plan, which deviates in some essential particulars from those generally employed, has lately been brought into notice by Mr. Knight, the very intelligent President of the Horticultural Society; and, as the very interesting account which has been published by the society may yet be unknown to many of our readers, we here transcribe it, and beg earnestly to call it to the serious attention of every farmer who is engaged in that branch of husbandry.

"The experiments were made upon different varieties of potatoes; but as the results were in all cases nearly the same, I think that I shall most readily cause the practice I recommend to be understood, by describing minutely the treatment of a single variety only, which I received from the Horticultural Society, under the name of 'Lankman's Potatoe:'" a tall sort raised some years since in Flanders.

"The soil in which I proposed to plant being very shallow, and lying upon a rock, I collected it with a plough into high ridges of four feet wide to give it an artificial depth. A deep furrow was then made along the center and highest part of each ridge; and in the bottom of this, whole potatoes, the lightest of which did not weigh less than four ounces, were deposited at only six inches distance from the center of one to the center of another. Manure, in the ordinary quantity, was then introduced, and mold was added, sufficient to cover the potatoes rather more deeply than is generally done.

"The stems of potatoes, as of other plants, rise perpendicularly under the influence of their unerring guide, gravitation, so long as they continue to be concealed beneath the soil, but as soon as they rise above it, they are to a considerable extent under the control of another agent, light. Each inclines in whatever direction it receives the greatest quantity of that fluid, and consequently each avoids, and appears to shun, the shade of every contiguous plant. The old tubers being large, and, under the mode of culture recommended, rather deeply buried in the ground, the young plants in the early part of summer never suffer from want of moisture; and, being abundantly nourished, they soon extend themselves in every direction till they meet those of contiguous rows, which they do not overshadow on account of the width of the intervals.

"The stems being abundantly fed, owing to the size of the old tubers, rise from the ground with great strength and luxuriance, support well their foliage, and a larger breadth of this is thus, I think, exposed to the light during the whole season, than under any other mode of culture which I have seen; and, as the plants acquire a very large size early in the summer, the tubers, of ever late varieties, arrive at a state of perfect maturity early in the autumn.

"Having found my crops of potatoes to be in the last three years, during which alone I have accurately adopted the mode of culture above described, much greater than they had ever previously been, as well as of excellent quality, I was led to ascertain the amount in weight which an acre of ground, such as I have described—the soil of which was naturally poor and shallow—would produce. A colony of rabbits had, however, in the last year, done a good deal of damage, and pheasants had eaten many of the tubers which the rabits had exposed to view; but the remaining produce per acre exceeded 539 bushels, of 82 lbs. each; two lbs. being allowed in every bushel on account of a very small quantity of earth which adhered to them."

"The preceding experiments were made with a large and productive variety of potatoe only; but I am much inclined to think that I have raised, and shall raise in the present year, nearly as large a produce per acre of a very well known small early variety—the 'ash-leaved kidney potatoe.' Of this I selected in the present spring the largest tubers which I could cause to be produced in the last year; and I have planted them nearly in contact with each other in the rows, and with intervals, on account of the shortness of only two feet between the rows. The plants at present display an unusual degree of strength and vigor of growth, arising from the very large size—for that variety—of the planted tubers; and as large a breadth of foliage is exposed to the light by the small, as could be exposed by a large variety; for I have always found the amount of the produce, under any given external circumstance, to be regulated by the extent of foliage which was exposed to light; and I have uniformly found that to obtain crops of potatoes of great weight and excellence, the period of planting should never be later than the beginning of March."

The produce of this small early variety, in fact, very considerably exceeded that of the large one first mentioned—being per acre 665 bushels of 82 pounds—and both so far exceeded the ordinary crops which had been previously raised, except in very rare cases, that doubts were entertained of the exactness of Mr. Knight's conclusions, and experiments, it will be seen, were made in the garden of the society in order to obtain further evidence.

SEED.

It has been ascertained by repeated trials that every variety of the potatoe, when propagated, during a series either by cuttings from the roots or by the whole tubers, is subject to degenerate; in some, the quality remaining good, after the produce in quantity has become defective, while with others, it disappears with the vigor of the plant. In order to obviate this inconvenience, and to preserve these species which are known to be valuable, farmers occasionally raise them

from the seed contained in the apples which grow upon the stalk; for which purpose a few large ripe apples should be chosen from a healthy plant, and be carefully preserved apart, in some dry sand, during the winter.

The seed is then picked out, and usually sown in rich garden ground in the month of April; but it is more expedient to sow it in a hot-bed early in March, to expose the shoots gradually to the open air, and to plant them out in a bed of rich earth in the middle of May. In the month of October, these seedlings will produce tubers, the largest of which are to be gathered, and planted out in the following spring, at a few inches distance from each other. When they rise about two inches above ground, they should be covered with two or three inches of mold, and managed in the same manner as if grown from the old potatoe.

When arriving at maturity, they should be continually and carefully examined, to discover those which appear the earliest in coming to perfection; which will be denoted by the decay of the haulm. These should be taken up, and in like manner those of a later growth: but those which show extraordinary vigor should be selected, and the produce of each sort being again sown in the ensuing year, a correct judgment may be formed of the respective properties of each. The process is thus so slow and troublesome, that it takes three years to bring any new variety to maturity, and a fourth before the real properties of the root can be correctly ascertained. The product will also sometimes disappoint the expectations of the grower: for although, generally speaking, the major portion of the crop will be found of the same quantity as the original stock, yet it occasionally fails, and new varieties are constantly produced, differing in both color, flavor, size, and the periods of ripening. Thus it appears from an experiment lately made in the garden of the London Horticultural Society, upon twenty-five seedling varieties reared by Mr. Knight, that the estimated produce varied from one to upwards of eighteen tons per acre, all of different qualities. The best produced from a single tuber twenty-seven large and seven small roots, the aggregate weight of which upon an acre of ground it was supposed would equal 17 ton 9½ cwt., and being both large, solid, mealy, white flavored, and in substance and appearance much resembling the white yam, has been named by the society, after Mr. Knight's country seat, the "Downton yam potatoe."

SETS AND TUBERS.

We have already stated that in the common course of field husbandry, potatoes are invariably planted for a crop either by depositing the entire root, or cuttings from it, called "sets." No objection appears indeed to have been commonly entertained against the planting of the whole root, or "tuber"—except on the score of economy, though probably no other advantage will be thereby gained, for every tuber contains many heads, or "eyes"—from each of which a shoot will spring, and by sowing these separately, or in cuttings containing two or more together, a saving is made in the quantity; but an extraordinary opinion is entertained regarding the best method of performing this operation.

Among numberless experiments which have been made with a view to compare the produce of plantations of different sizes of whole tubers, and sets from different sizes of cuttings, those of entire potatoes reported to the Bath Society were generally stated to be superior. Dr. Anderson found that the crop was in some measure proportionate to the weights of the sets; and that it was more profitable to plant small potatoes than small cuttings. Others, however, found that the difference in acreable produce, between large and small, cut or uncut potatoes for sets, was quite immaterial; but that the saving in the quantity sown, was so much in favor of the cuttings as to require only twenty bushels, while whole potatoes consumed thirty-seven bushels per acre. Yet, according to a report made to the Dublin Society of Agriculture, it was stated, on comparison with sets cut from reasonably large and small tubers, that the produce in favor of the former was as 84 to 64; and another well informed gentleman states, "he has uniformly found in all his experience that large sets of potatoes made a more productive return than small ones. And upon trial, both in garden and field, he has repeatedly found that planting whole potatoes, even though large, very much increases the crop. In this way, however, they require to be planted thinner, as the stems, being stronger and more luxuriant, occupy more space."

To set this point at rest, five plots of ground of equal size, and as nearly as possible of equal quality, were also lately selected by the London Horticultural Society for the growth of five different varieties; one half of which being planted with whole tubers, and the other with sets containing but one eye each; and, being placed at equal distances, eigteen feet apart, the result was as follows:

	Weight when taken up.					
Species.	Whole tubers.			Single eyes.		
	tons.	cwt.	lb.	tons.	cwt.	lb.
Early manly,.....	17	10	4	18	19	82
Shaw's,.....	20	15	26	20	0	4
Red-nosed kidney,..	18	7	71	17	12	49
Pink-eyed Scotch,..	22	15	83	20	2	7
Champion,.....	23	14	0	24	9	18

The whole tubers appeared above ground, in each instance three or four days earlier than the sets, and the haulm became somewhat longer; but the experiment shows that, although the total amount thus estimated to have been obtained is,

	tons.	cwt.	lb.
From whole tubers,.....	113	2	17
—— single eyes,.....	111	3	54

thus giving an apparent difference in five acres of about two tons, yet it was hardly more than the difference between the weight of the tubers and the sets originally planted.

These and other trials, indeed, afford presumptive evidence that sets cut from full grown, healthy tubers, are as productive as the whole root, for although it is recorded as the opinion of the President of the Society, founded upon a great variety of experiments carried on during a long series of years, "that the heaviest crops of potatoes, and those most profitable to the grower, will in most soils and seasons be obtained from tubers of considerable weight, and will be found least subject to decay in wet and cold springs; he, however, thinks it extremely probable that, when the soil is very dry, so as to preclude all grounds of fear of the cuttings decaying, more regular and better rows of plants may be obtained from single eyes placed at short distances, with a moderate large portion of the matter of the tuber, than the whole tubers."

It may also be observed that the eyes or beads, which appear like spots upon the skin of the potatoe, are of different kinds; those at one end being more prolific than the other; yet when planted in sets some farmers cut off both ends, only making use of the part in the middle, while others cut it longitudinally—from "nose to tail"—and set both halves indiscriminately; and many scoop out the eyes and plant them singly. The stems which spring from that end of the potatoe into which the fiber which connected it with the mother plant, and from which the potatoe itself is grown, germinate but feebly, and do not attain the same size as those which are found upon the other end, which may be seen by looking at potatoes in the spring, when they begin to bud: those which spring from the top end, having far greater vigor and luxuriance than those which spring from the root end.*

* The upper or nose end, although the most watery part of the potatoe, should be preferred, as the roots produced from it have been found to become sooner ripe, and to be of better quality than those grown from the bottom.—Farm. Mag. vol. xviii. p. 27.

"In every field of potatoes which I have ever seen, where the cuttings for seed were taken from both ends indiscriminately, some of the stems grow with much more vigor than others; which proceeds, I believe, in nine cases out of ten, from planting weak sets cut from the root end of the potatoe."—Ayton's Surv. of Ayrsh. p. 260.

Mr. Knight says that "the buds which vegetate from the lower sides of the tubers produce feeble stems."—Trans. of Hort. Society.

It is indeed a point which deserves very serious attention; and as the other portions of the potatoe can always be used for other purposes, it should never be neglected. Instead, however, of sowing single eyes, we should rather recommend the use of the entire cluster of buds which will be found on the top end, or nose, of the tuber.—*Library of Useful Knowledge, Farmer's Series.*

Auction—Farm for Sale.

I WILL sell without reserve a Farm of about 200 acres of land, lying in the town of West Bloomfield. This farm is situated on the main road leading from Canandaigua to Buffalo, one hundred acres on each side of the road; that on the south side has buildings on it—that on the other has none. There is about 25 acres of wheat on the ground. This farm can be sold in two separate lots, if it is the choice of purchasers. Those who wish to buy are requested to call and examine the premises before the day of sale, which will take place on the 12th of January next, 1837.

Likewise, at the same time and place, from 240 to 260 first rate Sheep, from 40 to 60 tons of good Hay, Wagons and Harness, Farming Tools, Household Furniture, some Lumber, and other articles too numerous to mention.

Terms liberal and made known on the day of sale.

PHINEAS M. SHEPARD.

West Bloomfield, Dec. 3, 1836. dec 10-f3t*

Fine Sheep.

THE subscriber offers for sale, at his residence in East Bloomfield, three hundred full blooded Merino Ewes, and five hundred fine Saxony Ewes, all young and in fine condition. Also, a lot of fine Merino and Saxony Bucks, pure blood. All have been selected by good judges, and with care as to fineness and heft of fleece.

LEONARD THOMPSON.

East Bloomfield, Ontario co. Dec. 1, 1836. f3t*

DURHAM CATTLE.

I WISH to sell my thorough bred improved Durham Short Horned Bull ROMEO, and Cow FANNY BOLIVAR, (with a Calf by her side.)

PEDIGREE OF ROMEO AND FANNY BOLIVAR.

ROMEO,

Red and white, calved in May, 1834; got by Cherry; dam Fanny Bolivar.

FANNY BOLIVAR.

Red and white, calved Dec. 16, 1829, bred by Thomas Williams of Chelsea, near Boston; got by the imported bull Bolivar; dam the imported cow Flora. Flora, calved in 1817, got by La Fourne's bull; dam a full blooded Durham Short Horned cow by Comet. Bolivar, "the sire of Fanny Bolivar," bred by Mr. Whitiker in England, imported by Col. Powell of Philadelphia.—See Herd Book, 2d vol. p. 24, No. 804.

CHERRY, "the sire of Romeo," was got by Lucifer out of Beauty, Lucifer got by Dishley, (a thorough bred Durham bull, imported in 1821 by Geo. Brintnell, Esq. of New Jersey,) out of the imported Durham cow Cherry, and got by Lancaster, who was sold in 1818 for 621 guineas. Cherry was got by a son of Comet, dam by Marsk; Marsk was got by Favorite, the sire of Comet; Lancaster was got by Wellington, and Wellington by Comet. Lancaster's dam, Moss Rose, out of Red Rose, by Favorite; dam by Favorite; gr. dam by Ben; g. gr. dam by Foljambet; g. g. gr. dam by Hubback. Beauty, the dam of Cherry, imported by De Wolf, was got by Samson out of a full bred Durham cow. Samson was got by Ossian, and Ossian by the celebrated old Comet.

I also have several half and three-fourth blood, which are fine. A. REYNOLDS.

Rochester, Nov. 22, 1836. nov 26-f4t

100,000 White Italian Mulberry Trees,

OF one to four year's growth, for sale at Gasport, Niagara co. by J. TIMERMAN.

N. B. Orders promptly attended to, and trees carefully packed and forwarded to any part of the states.

Royalton Center, Nov. 15, 1836. nov 19-f1ju

20,000 GENUINE Morus multicaulis, or Chinese Mulberry, of one and two years' growth, by the dozen, hundred or thousand.

Also—30,000 White Mulberry, of one and two yars' growth—for sale by ASA ROWE.

Road Making.

No branch of public improvement is of more importance to the farmer, nor indeed to the community at large, than the bettering of our common roads, particularly those which constitute the main avenues to market. These are the great arteries which transmit life, and vigor, and health to every part of the business community. Our turnpikes have proved a failure, from a mistaken parsimony in their construction, and their needless multiplication. Rail-roads will do upon the great thoroughfares of commerce and travel; but for the transaction of internal commerce between the great towns and the country, good public roads should have precedence over all others: because they dispense their benefits to all alike, and exempt us from the mortifying impositions of chartered wealth, and the officious impertinence of a host of subordinate officers. It is upon these public roads that the immense products of our farms are transported, and that we mostly receive in return the foreign commodities which we consume. If it cost the farmer twelve and a half cents per bushel, to transport his grain to navigable waters, or to market, upon a bad road, the actual expense would be diminished more than three-fourths, if he could quadruple his load upon a good road; for not only would there be a saving in animal power, and other expenses, to this extent, but there would be a further saving in the wear and tear of carriages, and in delays and accidents incident to bad roads. Roads, like the objects of most other expenditure, are cheapest when well made.

The business of road making has hitherto attracted very little of the public attention. Although the construction of roads is as much an art as common trades, and as much of a science as other branches of civil engineering, where good roads are the order of the day; yet, with us, the superintendence of their construction and repair is entrusted to all professions—to farmers, mechanics, lawyers, &c., who seldom understand much of the art, and know nothing of the science—and who are too often guided by self-interest, or caprice, and often rather mar than mend, the work of their predecessors.

We have derived many of our improvements from Great Britain; and from no country can we draw more useful teachings, in regard to road-making, than from her. For although fifty years ago, her roads were probably not so good as ours now are, wonderful improvements have been made in them, during the intervening half century. Her turnpikes, which cover, like a net-work, the surface of her island, are constructed upon the true McAdam plan, of preserving the earthy bed of the road always dry, by an efficient metal or stone covering, and sufficient side drains.—Their parish roads are now undergoing a similar improvement. These works, which absorb annually an appropriation of a million and a half pounds sterling, or six and a half million of dollars, give employment to the pauper population, and thus remunerate the public, in a measure, for this heavy national burthen. To make our readers acquainted with some of the leading principles which govern, in the business of road making, in Great Britain, we will state them, in a summary manner, as we find them laid down in the most recent British publications upon this subject, principally from the Farmer's Series of the Library of Useful Knowledge; premising, however, that although they apply mainly to metal covered roads, they are more or less applicable to the construction of all reads, where utility, durability and ultimate economy, are to be studied.

Foundation.—Eminent men differ upon this point; the one party contending that a *pitched* foundation is necessary to make a substantial and good road; the other, that no pitching is essential. Pitching, as here used, is a foundation formed of large stones The weight of opinion is against their use. The best foundation, the use of large stones being dispensed with, is a substratum kept perfectly dry by proper and effectual drainage. If one substance in road-making be harder than another, the harder substance should be upon the surface, and not at the foundation. To lay the softer upon the harder, must have the effect of sacrificing the inferior material.

Draining —All exertion to construct or repair roads, is considered unavailing, until the bed of the road is freed from water, and secured against its return. Of what service can metal (stone) be when the road is immersed in water? Can it consolidate? Can it form a compact and hard substance, when water is amongst it, consuming as it were its very vitals? To correct and prevent a recurrence of the evil, substantial side ditches should be opened, so as to give a slope of one inch in 24, between the crowns of the road and bottoms. If open drains cannot be made on both sides, owing to the declivity of the surface, under drains should be constructed, with outlets, through the bed of the road to the lower side.—And if springs exist in the scite of the road, their water must be concentrated, and conducted off by under drains. When a particular piece of road is observed to be continually heavy, and in a bad state, it is either caused by spring water, or is situated in a flat, from which the water cannot escape. These suggestions should not be lost to us. A principle defect in our roads is the want of efficient drainage. Wherever water is permitted to remain, either upon the surface or substratum, in wet seasons there will be a slough, and the bed of the road will be entirely broken up.

The substance or thickness of materials.—Without a sufficient depth of consolidated materials, there will not be a resistance equal to the weight which a highway is subject to There must be weight to resist weight. If the weight of metal forming the substance be of an imperfect quality, more will be required than when sound and clean. In proportion to the quantity of deleterious matter contained in the body, (as earth, small gravel, soft stone, &c.) must the thickness be increased. Any matter that is not of a sound nature, has no power in road making, and, therefore, the hard materials alone contained in the road's substance, can be calculated upon, as possessing the quality to resist weights. Experience has taught, that there can be no real security against a road giving way, taking the year through, unless twelve inches, at least, of good consolidated materials, form the body of a road; and this upon a foundation rendered sound and dry by effectual drainage.

Sort of materials.—Not the *hardest*, but the *toughest*, stones are the best. The first will break, the latter bend. The trappean and basaltic rocks are therefore preferred; then whinstone, dark colored granite, and lime-stones.

Preparation and size of materials.—The stone to be employed is first freed from dirt, and then broken so small as to pass through the inch meshes of a wire seive. Some allow the stones to retain the size of two inches, but none larger. The tougher the nature of the material, the smaller the size should be.

Quantity of materials to be laid on at a time.—When a thick coat is laid on, the destruction of the material is very great before it becomes settled or incorporated with the road. The stones will not allow each other to lie quiet, but are continually elbowing one another, and driving their neighbors to the left and right, above and below. This wears off their angular points, produces mud and dirt, and reduces the stones to an angular form, and prevents their uniting and becoming firm. If there be substance enough already on the road, it will never be right to put on more than a stone's thickness at a time. A cubic yard nicely prepared and broken to a rod superficial, will be quite enough for a coat, and will be found to last as long as double that quantity, put on unprepared and in thick layers. There is no grinding to pieces when thus applied; the angles are preserved, and the materials are out of sight and incorporated in a very little time. Each stone becomes fixed directly, and keeps its place, thereby escaping the wear and fretting which occur when they are applied in a thick stratum. On new roads, the covering should be applied in thin coats. As soon as one is imbedded apply another, until the desired power is obtained.

"To say nothing of the saving in a course of years, by the durability of a road formed under the new system, and which has been in some cases, even where the traffic is considerable, by the side of a large town, to last for seven years without an additional stone being applied; to say nothing of the saving to the public, in wear and tear of horses, carts, and tackle; to say nothing of the comfort of travelling a smooth road; and also to say nothing of employment found for the poor; yet a road can be maintained good and perfect for half the sum, under the new system, which under the old, is expended without improvement."

Spreading.—Cause the load to be shot down a short distance from the place upon which you wish the materials to be finally spread; and direct the spreader to cast every shovel full from him equally, all over the surface, and in such a manner as he would do, if he were sowing wheat broadcast. The road will then be not thicker in one place than another, and a section will be produced perfect and true.

The writer on the subject of roads, in the Farmers' Series, suggests some alterations in the British road laws, which have a particular bearing upon our condition, and seem well worthy of our consideration. He suggests,

1. That the business of road making and repairing, should be entrusted to the authority of a county, and not of a parish; because, first, the *public* interest will govern more, and *private* interest less; and secondly, the limited extent of the funds of a parish, will not admit of giving such a salary to a surveyor—an officer there deemed indispensable—*as will secure the services of a person* EDUCATED *in the principles of road management, and otherwise qualified for the office of surveyor*—an office whose duties are here performed by path-masters.

2. That the means for maintaining roads be no longer obtained by statute labor, which is similar to our road assessments—because the law operates in this respect partially, and the time spent by the farmer in paying this tax, is worth more to him than it benefits the public. He recommends that the cartage be done by contract, by which he calculates a saving of 50 per cent., and that the manual labor be judiciously applied under the supervision of a competent engineer.

3. That the surveyor, or manager, be appointed for a longer period than one year, that he may be enabled to carry out a systematic plan of improvement, and give efficacy to his skill and science.

Scraping.—If it is desirable to keep a road dry at the foundation, it must be equally so at the surface.—*Cultivator.*

Beet Sugar in England.

Many of the English farmers are beginning to turn their attention to the cultivation of the Silesian beet for the purpose of manufacturing it into sugar. The success which has attended the business in France, they consider a sufficient guaranty for its profitable cultivation in England, and they are engaging in it with a spirit and perseverance highly creditable to their national enterprise.—*Ib.*

Destruction of Forest Trees.

Between three and four millions of pine trees have been destroyed in the German forests by an insect called the *Scholybus Destructer.* Multitudes of elm trees in Dunkirk, Calais and Boulogne have been destroyed by the same insect.

Potatoes Manured with Pine Leaves.

A southern paper states that pine boughs and leaves make an excellent manure for potatoes.

A farmer in New Jersey having a large number of young pine trees, growing near his potato grounds, he gathered a sufficient quantity of the boughs to form a considerable covering to a row of potatoes, which he was planting in drills. In the drill on one side of this, he used lime for manure, and on the other he put marl. They were all covered with earth in the same manner, and received the same culture. On digging them, those that were manured with the pine, were twice as large as the others, and double in quantity.